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ABSTRACT

Reading and mathematics objectives measured by the eighth grade tests of the Georgia Criterion-Referenced Tests are described. This guide was designed to familiarize the teacher with assessment characteristics for each objective. Objectives in concept identification, component operations, and problem solving are defined for mathematics. All concepts and operations are examined in academic, everyday, and employment contexts. Similarly, in reading, objectives are defined for the areas of literal and inferential comprehenion, and problem solving, in academic, everyday, and employment contexts. Examples of questions are provided for each objective and the assessment characteristics are defined to show the content required of the grade level. The strategies students may be using for incorrect options are outlined for each sample question. (SLD)

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GEORGIA CRITERION-REFERENCED TESTS

EIGHTH GRADE

Objectives and Assessment Characteristics-- Mathematics and Reading Tests

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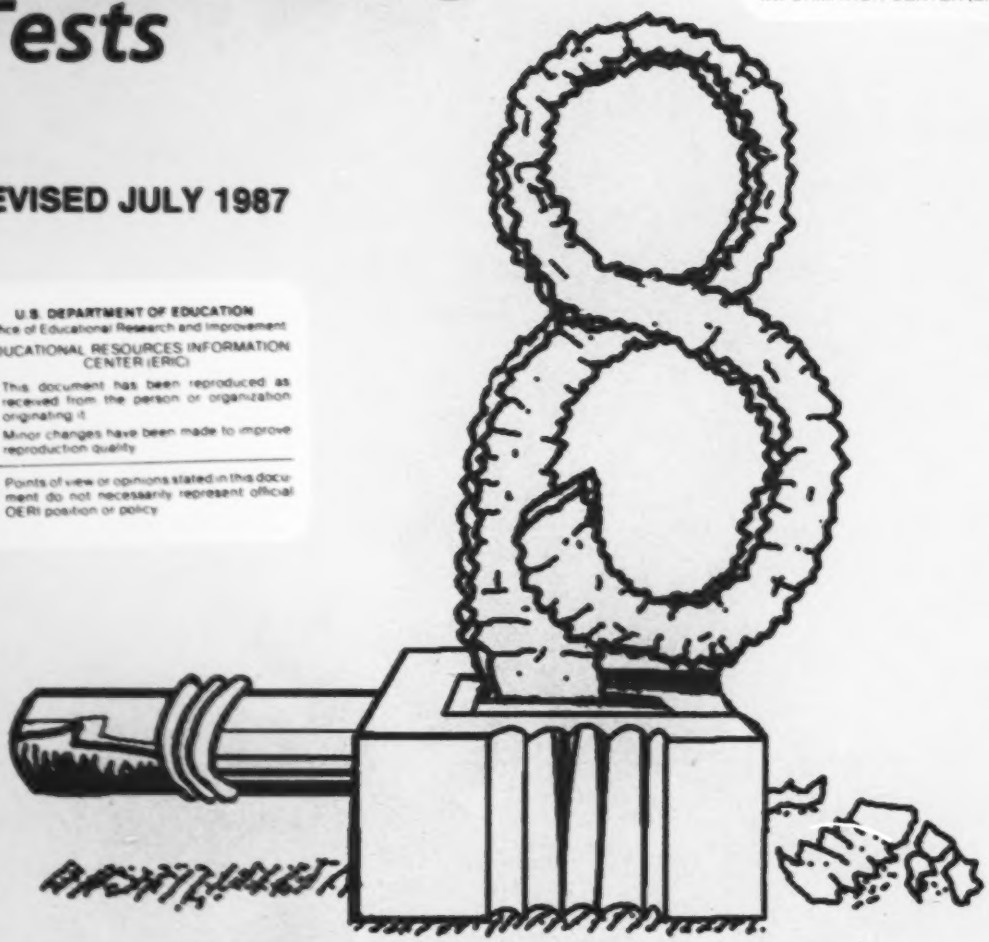

Georgia Department of Education

TM 012 656

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FOREWORD

The Georgia criterion-referenced tests measure basic skills which Georgia educators have identified as essential for students to acquire for continued academic progress. In addition, the results of tests given to eighth graders are used to identify students who may need additional learning experiences before taking the High School Basic Skills Tests. The BSTs must be passed as part of the requirements to obtain a regular high school diploma. This document describes the reading and mathematics objectives measured by the eighth grade tests.

OVERVIEW OF TEST DEVELOPMENT

The development of test questions for the eighth grade tests begins after test content is specified by committees of teachers and curriculum specialists. Test specifications are incorporated in a set of writing guides used to train teachers from local school systems to write and edit test questions. These writing guides form the basis for this document.

Every question is field-tested. Only those questions that match objectives and are found to be statistically sound and free of bias can be used on the actual eighth grade test forms.

As part of the ongoing process of developing test questions for the eighth grade tests, the writing guides are reviewed and revised as needed. This document has been based on the latest refinement of test content recommended by teacher committees.

In order for teachers to design effective instruction and to promote good testing practices, it is important that they understand the range of content covered on the tests and the type of question formats that are used on the tests. This document is designed to aid teachers in this task.

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HOW TO USE THIS GUIDE

This guide was designed to familiarize teachers with the eighth grade reading and mathematics CRT objectives. Each objective is described by:

Assessment Characteristics. This section lists the components of each objective and what content is appropriate for inclusion in this test.

Examples for Objectives. Every objective has sample questions that show each piece of content that can be tested. The sample questions are not intended to represent every possible format. The number of examples shown for an objective also does not reflect how many questions may appear on the tests. Some objectives simply have more parts than others.

Strategies for Options. For teachers' convenience, the notes in the column next to the response options are intended to explain why the particular group of incorrect options was selected for each test question. The notes describe inappropriate or incorrect strategies that students may have used in selecting the other options. For example,

$$\begin{array}{r} 453 \\ -\ 129 \\ \hline \end{array}$$

*(1)	324	(1) * (Correct response)
(2)	334	(2) Students might subtract correctly in the ones place but forget to borrow from the tens place.
(3)	336	(3) Students might subtract the smaller from the larger digit in the ones place.
(4)	582	(4) Students might misread the sign and add.

Strategies in the examples describe a limited number of possible errors that students could make. It would be inappropriate to limit consideration of errors only to those represented by the sample questions.

If you have questions about this document, contact the Division of Assessment, Georgia Department of Education.

These objectives represent only a portion of the reading and mathematics curriculum recommended for Georgia students. For further information, consult the documents entitled Essential Skills for Georgia Schools and Basic Curriculum Content for Georgia's Public Schools, or contact the Division of General Instruction, Georgia Department of Education.

MATHEMATICS

EIGHTH GRADE CRITERION-REFERENCED TESTS
MATHEMATICS OBJECTIVES

Concept Identification

Objective 1: The student translates forms of rational numbers in an academic, everyday, or employment context.

Objective 2: The student identifies relations of numbers, properties of numbers, and properties of operations in an academic, everyday, or employment context.

Objective 3: The student identifies customary or metric units to measure length, area, volume, weight, time, and temperature in an academic, everyday, or employment.

Objective 4: The student identifies relations and properties of sets of points in an academic, everyday, or employment context.

Component Operations

Objective 5: The student determines probabilities in an academic, everyday, or employment context.

Objective 6: The student computes with whole numbers, fractions, decimals, integers, and percents in an academic context.

Objective 7: The student applies formulas and units of measurement to determine length, area, volume, weight, time, temperature, and amounts of money in an academic, everyday, or employment context.

Problem Solving

Objective 8: The student selects appropriate operations for a given problem situation, and the reverse, in an academic, everyday, or employment context.

Objective 9: The student solves word problems in an academic, everyday, or employment context.

Objective 10: The student organizes data in an academic, everyday, or employment context.

Objective 11: The student interprets data which have been organized in an academic, everyday, or employment context.

Objective 12: The student estimates results in an academic, everyday, or employment context.

EIGHTH GRADE CRITERION-REFERENCED TESTS
MATHEMATICS TEST CONTENT

Skill Area: **Concept Identification**

Objective 1: **The student translates forms of rational numbers in an academic, everyday, or employment context.**

Assessment Characteristics:

- **translates words to numerals (and the reverse)**
- **translates decimals to percents (and the reverse)**

  Questions contain decimals less than one, but not smaller than thousandths. Percents are 100 or less; there are no percents with fractions.

- **translates fractions to percents (and the reverse)**

  Percents with fractions ($33\frac{1}{3}\%$) or terminating decimals or the percents 33.33% and 66.67% may be included. Students are not required to translate mixed numbers or percents over 100.

  When the question requires translating a percent into a fraction, the options are given in lowest terms.

- **translates fractions to decimals (and the reverse)**

  Questions may include mixed numbers of terminating or repeating decimals but not improper fractions or decimals smaller than thousandths.

  When a question requires translating a decimal to a fraction, the options are not necessarily in lowest terms.

  Fractions presented in the question do not have to be in lowest terms.

Features of numbers used in these questions:

Fractions which may be included are halves, thirds, fourths, fifths, eighths, tenths, twelfths, hundredths; denominators with factors of a hundred may also be used.

When rounded repeating decimals (e.g., .33 and .67) are used, the question asks "Which fraction is closest to . . .?" Questions involving translating thirds to percents, use the wording ". . .is closest to . . ." and use 33.33 and 66.67 as correct answers.

Decimals may go up to thousandths.

Whole numbers (up to seven digits) may be used.

- **translates equivalent fractions**

  Two types of questions are included:

  -simplifying fractions or

  -renaming involving mixed numbers.

  Translations do not require lengthy computation.

  Fractions are not necessarily presented in lowest terms.

Examples for Objective 1:

words to numerals

Which is the correct way to write seventeen and three hundredths?

(1)	17,300	(1) hundreds confused for hundredths
(2)	17.300	(2) confused hundreds for hundredths
*(3)	17.03	(3) *
(4)	17.003	(4) included extra zeros

Strategies for Options:

---

decimals to percents

At Susan B. Anthony Middle School, 80% of the students ride the bus to school. Which shows 80% as a decimal number?

(1)	80.0	(1) ignored percent
(2)	8.0	(2) incorrect placement of decimal
*(3)	.8	(3) *
(4)	.08	(4) included extra significant zero

---

decimals to percents

Which shows 4%?

(1)	4.0	(1) incorrect placement of decimal
(2)	0.4	(2) incorrect placement of decimal
*(3)	.04	(3) *
(4)	.004	(4) incorrect placement of decimal

---

fractions to percents

Which fraction equals 45%?

*(1)	$\frac{45}{100}$	(1) *
(2)	$\frac{4}{5}$	(2) used digits of given number
(3)	$\frac{45}{55}$	(3) 100 - 45 = 55
(4)	$\frac{5}{4}$	(4) used digits of given number

Examples for Objective 1:

fractions to decimals

$5\frac{3}{4} =$

		Strategies for Options:
*(1)	5.75	(1) *
(2)	5.34	(2) used digits of given number
(3)	5.25	(3) decimal equivalent of another fraction
(4)	3.54	(4) used digits of given number

decimals to fractions

Which is the same as 3.75?

(1)	$3\frac{7}{5}$	(1) used digits of given number
*(2)	$3\frac{3}{4}$	(2) *
(3)	$3\frac{5}{7}$	(3) used digits of given number
(4)	$3\frac{1}{4}$	(4) confused $\frac{1}{4}$ with $\frac{3}{4}$

equivalent fractions

Which is the same as $2\frac{3}{4}$?

(1)	$\frac{23}{4}$	(1) whole number and numerator become new numerator
*(2)	$\frac{11}{4}$	(2) *
(3)	$\frac{6}{4}$	(3) $(2 \times 3) \div 4$
(4)	$\frac{5}{4}$	(4) $(2 + 3) \div 4$

Examples for Objective 1:
equivalent fractions

Which is the same as $\frac{9}{12}$?

(1) $\frac{2}{3}$

*(2) $\frac{3}{4}$

(3) $\frac{4}{7}$

(4) $\frac{7}{10}$

Strategies for Options:

(1) $\frac{2}{3}$ often confused with $\frac{9}{12}$

(2) *

(3) $\frac{9-5}{12-5}$

(4) $\frac{9-2}{12-2}$

Skill Area: **Concept Identification**

Objective 2: **The student identifies relations of numbers, properties of numbers, and properties of operations in an academic, everyday, or employment context.**

Assessment Characteristics:

Questions test the understanding of relations and properties, not computational ability.

- **identifies relations of numbers**

  Questions testing the relations of numbers may involve the following relations: *is a multiple of, is a factor of, is the same as, is greater than, is less than*.

  Questions testing relations may require the student to identify correctly ordered fractions, decimal numbers, or percents, but not a combination of two types.

  Fractions are limited to halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths, and hundredths; the denominator can also be factors of a hundred. Fractions may have different denominators and may include mixed numbers, but not improper fractions.

  Questions may include percents greater than 100%.

  Questions for this objective may involve proportional relationships.

  Questions may require the student to identify missing elements of ordered pairs or to recognize an appropriate statement of the relation of a set of ordered pairs.

- **identifies properties of numbers**

  Questions may require the student to identify factors and multiples of numbers, prime numbers, and even and odd numbers.

- **identifies properties of operations**

  Identity, associative, commutative, and distributive properties may be tested by requiring students to identify which mathematical sentence is always true or always false.

  The focus is on the use of the property in computation, not on computation.

Examples for Objective 2:

relations of numbers

Which is the largest number?

(1) .29
*(2) .91
(3) .092
(4) .0019

Strategies for Options:

(1) compares hundredths place
(2) *
(3) "92" is greatest number
(4) most places after decimal

---

relations of numbers

{(2,6), (3,9), (4,12)}

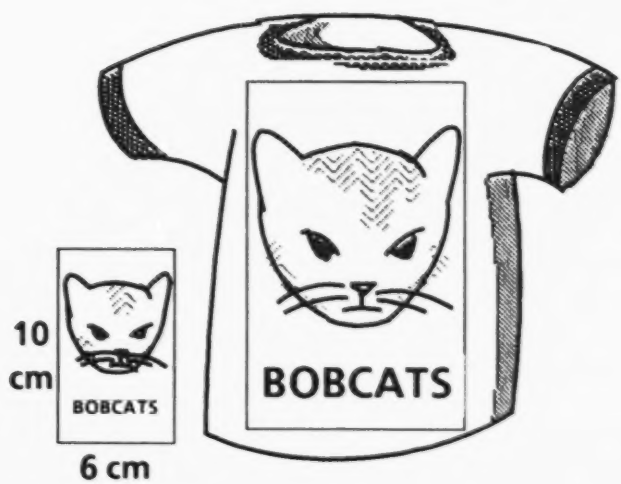
If (n, m) belongs to the relation above, then which is m?

(1) $n + 1$
(2) $n + 4$
*(3) $n \times 3$
(4) $n \times 2$

(1) a typical relation
(2) works for first pair only
(3) *
(4) correct operation but wrong multiplicand

---

relations of numbers



The picture is enlarged for the T-shirt so that the length increases from 10 to 30 centimeters. Which is the width of the enlargement?

(1) 12 cm
*(2) 18 cm
(3) 20 cm
(4) 32 cm

(1) Width multiplied by 2 instead of 3
(2) *
(3) Length multiplied by 2
(4) Perimeter

Examples for Objective 2:

relations of numbers

{(1,1), (2,4), (3,12), (4,12)}

If (m,n) belongs to the relation above, which of the following would be true?

(1) m is equal to n
(2) m is greater than n
*(3) m is a factor of n
(4) m is a multiple of n

Strategies for Options:

(1) true of first pair only
(2) confused m and n
(3) *
(4) confused m and n

---

properties of numbers

Which is a prime number?

(1) 6
(2) 12
*(3) 17
(4) 21

(1) composite
(2) composite
(3) *
(4) composite

---

properties of numbers

Which is an odd number?

(1) an even number x an odd number
(2) an odd number + an odd number
(3) an even number + an even number
*(4) an even number + an odd number

(1) gives even number
(2) gives even number
(3) gives even number
(4) *

---

properties of numbers

Which is the set of multiples of 3 between 5 and 17?

(1) {5, 10, 15}
(2) {8, 9, 12}
*(3) {6, 9, 12, 15}
(4) {7, 10, 13, 16}

(1) multiples of 5
(2) 8 is not a multiple
(3) *
(4) numbers are 3 apart, not multiples

---

properties of operations

Which is NOT equal to 12 x 13?

(1) (10 x 13) + (2 x 13)
(2) (10 x 12) + (3 x 12)
(3) (20 - 8) x 13
*(4) (10 x 13) + 2

(1) distributive property applied
(2) distributive and commutative property applied
(3) 12 = 20 - 8
(4) *

Examples for Objective 2:

properties of operations

Which is true for all numbers n?

(1) $n + 0 = 0$
(2) $n \times 0 = n$
(3) $n \times 1 = 1$
*(4) $n \div 1 = n$

Strategies for Options:

(1) misapplied additive identity
(2) misapplied multiplicative identity
(3) misapplied multiplicative identity
(4) *

Skill Area: **Concept Identification**

Objective 3: **The student identifies customary or metric units to measure length, area, volume, weight, time, and temperature in an academic, everyday, or employment context.**

Assessment Characteristics:

- **identifies units of length, area, volume, weight, time, and temperature**

This objective involves choosing the type of unit or size of unit that applies to a specific measurement problem.

Students may be required to determine the precision of measurement required for a given problem situation and, then, to select the appropriate size unit for that degree of precision.

There are no conversions from metric to customary or the reverse. The prefixes *milli-*, *centi-*, and *kilo-* may be used.

Appropriate units include:

length	area	volume	weight	time	temperature
inch	square inch	pint	ounce	second	degrees Celsius
foot	square foot	quart	pound	minute	degrees Fahrenheit
yard	square yard	gallon	ton	hour	
mile	square mile	liter	gram	day	
meter	m^2	ounce		week	
	cm^2	cu. in.		month	
	mm^2	cu. ft.			
		cu. yd.			
		m^3			
		cm^3			
		mm^3			

Examples for Objective 3:

Strategies for Options:

units of measure - appropriate unit

Which unit of measurement should be used in weighing a penny?

(1) kilometer	(1) measures length
(2) kiloliter	(2) measure of volume
(3) liter	(3) measure of volume
*(4) gram	(4) *

---

units of measure - appropriate size of unit

A school bus picks Stacy up each morning. The distance from home to school is most likely to be 10

(1) inches.	(1) unit of length is too small
(2) feet.	(2) unit of length is too small
(3) yards.	(3) unit of length is too small
*(4) miles.	(4) *

---

units of measure - appropriate unit

The label on a can of paint describes the area it will cover. A gallon of paint will most likely cover 250

(1) cubic feet.	(1) incorrect unit
*(2) square feet.	(2) *
(3) cubic miles.	(3) incorrect unit
(4) miles.	(4) incorrect unit

Skill Area: **Concept Identification**

Objective 4: **The student identifies relations and properties of sets of points in an academic, everyday, or employment context.**

Assessment Characteristics:

This objective focuses on the relationships between sets of points.

- **identifies geometric relations**

  Relations included are: *inside, outside, parallel, perpendicular, similar, congruent, vertical, and horizontal.* Relation concepts are not presented as vocabulary items.

- **identifies geometric properties**

  The geometric properties used are: the number of degrees in a right angle, circle, triangle, or rectangle and the relationships between sides (e.g., *parallel*) or among sides (e.g., *has the same number of sides as*) of figures.

  Students may be required to identify properties which do not change when figures are transformed by rotation, expansion, or reflection.

  Questions may deal with lines of symmetry.

- **identifies geometric shapes in a drawing**

  The drawings may include familiar objects or simple line drawings.

  Plane figures include: *circles, triangles, rectangles, squares, points, lines, line segments, planes, parallelograms, and trapezoids.* Solid figures include: *cones, cubes, cylinders, spheres, and pyramids.*

- **classifies sets of points by characteristics**

  Sets of points may be classified according to a specified dimension or feature, such as *open/closed, plane/solid,* or *regular/irregular.*

- **identifies location of a set of points**

  Given a graph or map, questions may ask students to

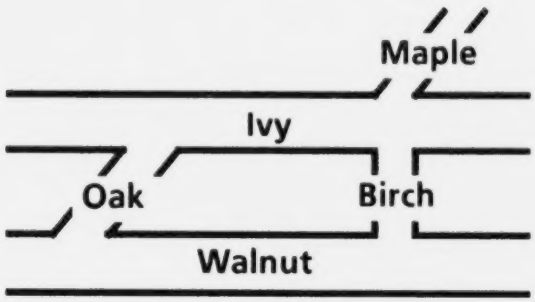
  -give the ordered pair of letters or numbers that locate a point or
  -identify the point that is named by a coordinate pair.

  Graphs may use all four quadrants.

Examples for Objective 4:

Strategies for Options:

geometric relations



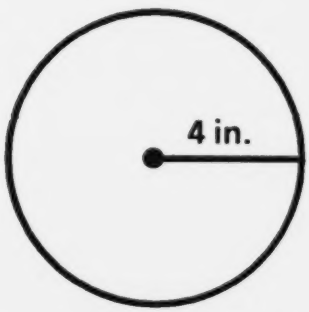
On the map, which street appears to be parallel to Ivy?

(1) Oak
(2) Birch
(3) Maple
*(4) Walnut

(1) intersecting streets
(2) perpendicular
(3) intersecting
(4) *

---

geometric relations



A circle has a radius of 4 inches. All points which are a distance of 5 inches from the center of the circle are located

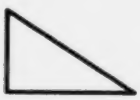
*(1) outside the circle.
(2) on the circle.
(3) inside the circle.
(4) at the center of the circle.

(1) *
(2) equal to 4 inches
(3) less than 4 inches
(4) less than 4 inches

Examples for Objective 4:

geometric relations

Which triangle is similar to the triangle above?

(1) 

(3)

*(2)

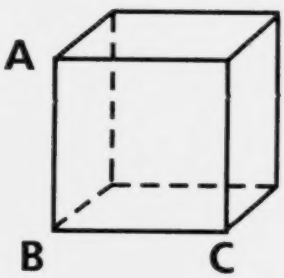
(4)

Strategies for Options:

(1) not similar
(2) *
(3) not similar
(4) not similar

---

geometric properties



Which is true of the cube above?

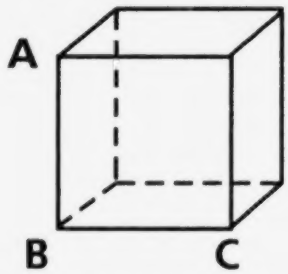
(1) Length of $\overline{AB}$ > length of $\overline{BC}$.
(2) Length of $\overline{AB}$ < length of $\overline{BC}$.
*(3) $\overline{AB}$ is perpendicular to $\overline{BC}$.
(4) $\overline{AB}$ is parallel to $\overline{BC}$.

(1) one side is not longer
(2) one side is not shorter
(3) *
(4) $\overline{AB}$ is perpendicular to $\overline{BC}$.

Examples for Objective 4:

Strategies for Options:

geometric properties



The faces of a cube lie in how many planes?

(1) 4
*(2) 6
(3) 8
(4) 12

(1) number of edges in 1 plane
(2) *
(3) number of vertices
(4) number of edges

---

geometric shapes in a drawing

The silo next to the barn is made up of which two solids?

(1) a cone and a sphere
*(2) a cone and a cylinder
(3) a cylinder and a sphere
(4) a cylinder and a pyramid

(1) confused cylinder for sphere
(2) *
(3) confused cone for sphere
(4) confused cone for pyramid

Examples for Objective 4:

set of points by characteristics

Which does NOT contain a circle?

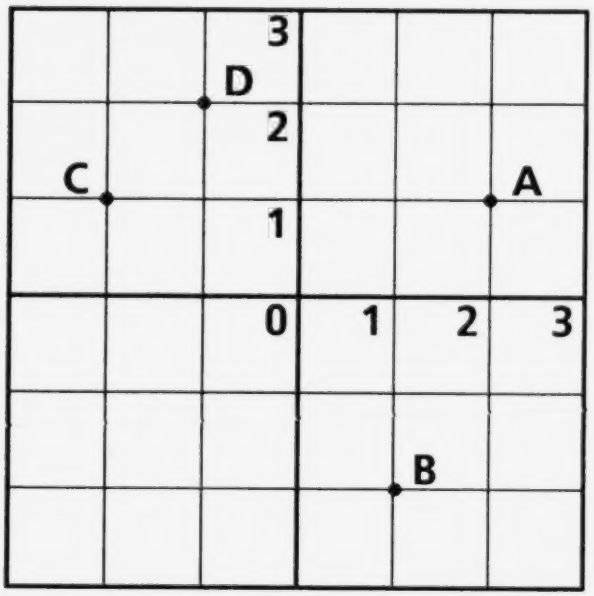
(1) cone
*(2) cube
(3) sphere
(4) cylinder

Strategies for Options:

(1) any intersection of a plane perpendicular to axis is a circle
(2) *
(3) any intersection of a nontangent plane is a circle
(4) any intersection of a plane parallel to base is a circle

---

location of a set of points



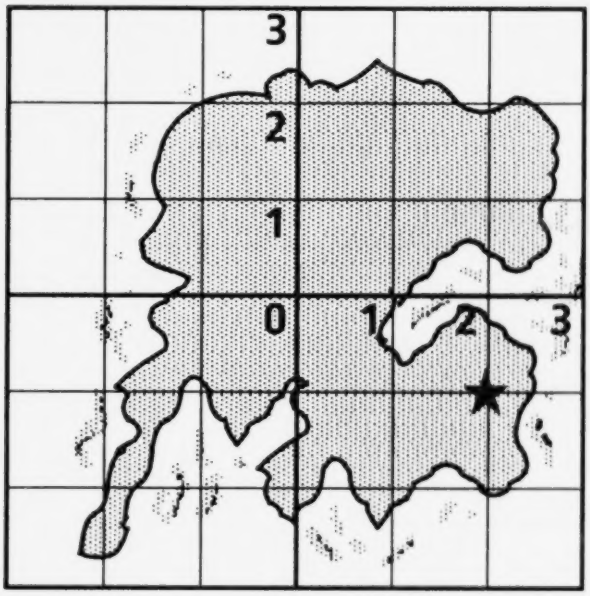
Which point is located at (-1, 2)?

(1) A
(2) B
(3) C
*(4) D

(1) (2, 1)
(2) (1, -2)
(3) (-2, 1)
(4) *

Examples for Objective 4:

identifies a point



At which coordinates is the capital (★) located?

(1) (1,2)
* (2) (2,-1)
(3) (-1,2)
(4) (-2,1)

Strategies for Options:

(1) reversed coordinates, confused direction
(2) *
(3) reversed the coordinates
(4) confused directions

Skill Area: **Component Operations**

Objective 5: **The student determines probabilities in an academic, everyday, or employment context.**

Assessment Characteristics:

Questions present a problem situation and ask the student to determine the likelihood of a specific event.

- **determines probabilities**

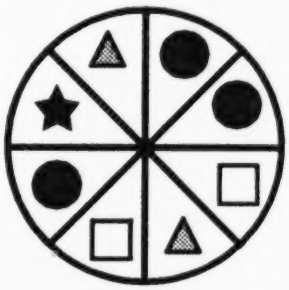
  Events with zero or one probability may be included.

  Probabilities are not presented as percents. Neither joint nor dependent events are used.

  Questions may require students to identify events that are most likely, least likely, or equally likely to occur, given a set of possible outcomes.

Examples for Objective 5:

probabilities



On the spinner above, which is the probability of getting a □ ?

(1) $\frac{6}{8}$

*(2) $\frac{2}{8}$

(3) $\frac{2}{6}$

(4) $\frac{8}{2}$

Strategies for Options:

(1) 1 - probability

(2) *

(3) 2:6 - odds of getting a square

(4) 1 ÷ probability

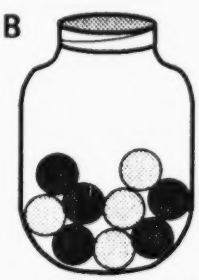
---

probabilities

Jar A

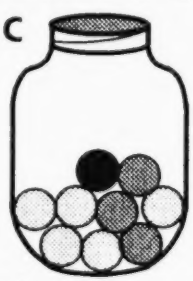
3 red, 2 blue, 1 green

Jar B



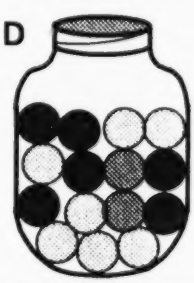
4 red, 5 green

Jar C



5 red, 3 blue, 1 green

Jar D



7 red, 2 blue, 6 green

If a person drew a marble without looking, from which jar would a red marble MOST LIKELY be drawn?

(1) Jar A
(2) Jar B
*(3) Jar C
(4) Jar D

(1) 3/6<5/9
(2) 4/9<5/9
(3) *
(4) 7/15<5/9

Skill Area: **Component Operations**

Objective 6: **The student computes with whole numbers, fractions, decimals, integers, and percents in an academic context.**

Assessment Characteristics:

This objective measures the student's ability to add, subtract, multiply, and divide using whole numbers, fractions, decimal numbers, integers, and percents. Test questions emphasize the correct use of an algorithm rather than lengthy computation.

The following types of numbers or problems are appropriate:

- **computes using whole numbers**

  Addition and subtraction problems requiring regrouping

  Multiplication problems with the total number of digits for factors less than seven (1 digit by 5 digits, 2 digits by 4 digits, 3 digits by 3 digits)

  Division problems with a divisor of 2 digits or less

  Division problems with dividends not exceeding 5 digits

  Division problems whose quotients contain a zero

  Division problems that require the annexation of zero

  (Questions will not use the square root algorithm.)

- **computes using fractions**

  Mixed numbers but not improper fractions

  Fractions with like and unlike denominators

  Fractions that are not necessarily in reduced form

- **computes using decimal numbers**

  Decimals that are not less than thousandths

  (These questions focus on the correct placement of the decimal.)

- **computes using integers**

  (These questions focus on knowing the correct sign (+ or −) to use with the result.)

- **computes using percents**

  Finding the percentage, rate, or base for percent problems

  Percents that are between 1 and 100 inclusive

  (Percents of increase or decrease problems are not included.)

Examples for Objective 6:

Strategies for Options:

whole numbers

$$\begin{array}{r} 261 \\ \times 503 \\ \hline \end{array}$$

(1)	251,483	(1) added 1 to 2 before multiplying (3 × 2) and added 3 to 2 before multiplying (5 × 2)
*(2)	131,283	(2) *
(3)	101,183	(3) didn't carry
(4)	13,833	(4) 261 × 53--forgot zero

fractions

$$3\frac{1}{5} + 5\frac{2}{3} =$$

(1)	$8\frac{3}{8}$	(1) added top and bottom 1 + 2 = 3 5 + 3 = 8
(2)	$8\frac{3}{15}$	(2) got common denominator but added 1 + 2
*(3)	$8\frac{13}{15}$	(3) *
(4)	$8\frac{13}{30}$	(4) got common denominator but then added

decimals

$$5 - 1.35 =$$

(1)	0.0365	(1) placed decimal too far to left
(2)	0.365	(2) placed decimal too far to left
*(3)	3.65	(3) *
(4)	36.50	(4) placed decimal too far to right

integers

$$\begin{array}{r} -8 \\ \times -7 \\ \hline \end{array}$$

(1)	-56	(1) multiplied but confused on sign
(2)	-15	(2) added
(3)	+ 15	(3) added but confused on sign
*(4)	+ 56	(4) *

percent

Which is 40% of 200?

(1)	5	(1) 200 ÷ 40
(2)	8	(2) misplaced decimal
*(3)	80	(3) *
(4)	160	(4) 200 – 40

Skill Area: **Component Operations**

Objective 7: **The student applies formulas and units of measurement to determine length, area, volume, weight, time, temperature, and amounts of money in an academic, everyday, or employment context.**

Assessment Characteristics:

- **applies units of measurement to determine length, area, volume, weight, time, and temperature**

  Real life situations (e.g., *vocational education*) may be used. All test questions are restricted to real numbers and may require rounding. Graphics may be used.

  Conversions will be within the same system of measurement (i.e., no metric to customary, or the reverse).

  Elapsed time may be measured as well as the time zone changes in the U.S.

  A scale of measurement may be presented for the student to apply. The prefixes *milli-*, *centi-*, or *kilo-* are suitable. Nonstandard units of measurement also may be used.

  Appropriate units for this objective include:

length	area	volume	weight	time	temperature
inch	square inch	pint	ounce	second	degrees Celsius
foot	square foot	quart	pound	minute	degrees Fahrenheit
yard	square yard	gallon	ton	hour	
mile	square mile	liter	gram	day	
meter	m^2	ounce		week	
	cm^2	cu. in.		month	
	mm^2	cu. ft.			
		cu. yd.			
		m^3			
		cm^3			
		mm^3			

- **applies formulas**

  These questions ask the student to find simple interest, distance/rate, miles per gallon, perimeter, or area (using rectangles, triangles, or circles), volume (using rectangular solids), weight, time, temperature, or amount of money.

applies formulas (cont.)

Also appropriate are questions requiring the student to solve simple geometric problems, either directly, by using ratios of similar polygons, or by applying the Pythagorean theorem.

Formulas may or may not be present in the questions. (Simple formulas such as area and perimeter of triangles and rectangles are usually not provided.)

Questions determining amounts of money may involve:

- counting money
- making change
- solving problems using money.

Making change can be done by counting, subtracting or determining the least number of coins required for a specific amount.

Questions may involve computation as well as recognition of the amount of money shown.

Problems requiring sales tax or discount computations are included.

Half-dollars, silver dollars and two-dollar bills are not used, nor are denominations greater than twenty.

Examples for Objective 7:

units of length

Which is the number of inches in 2'3"?

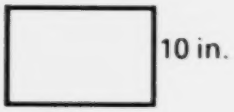
(1) 5
(2) 23
*(3) 27
(4) 38

Strategies for Options:

(1) added 2 + 3
(2) 2(10) + 3
(3) *
(4) 3(12) + 2

---

units of area



Which is the area of the figure above in square inches?

(1) 35 square inches
(2) 70 square inches
(3) 125 square inches
*(4) 250 square inches

(1) (25 + 10)
(2) (2 × 35)
(3) $\frac{1}{2}$(25 × 10)
(4) *

---

units of capacity

Which is the number of pints in 4 quarts?

(1) 1
(2) 2
*(3) 8
(4) 16

(1) a pint is half a quart
(2) 2 pints = 1 quart
(3) *
(4) confused cups with pints

---

units of weight

Which shows the number of kilograms in 425 grams?

*(1) 0.425
(2) 4.25
(3) 4250
(4) 42500

(1) *
(2) 425 divided by 100
(3) 425 multiplied by 10
(4) 425 multiplied by 100

Examples for Objective 7:

Strategies for Options:

units of time

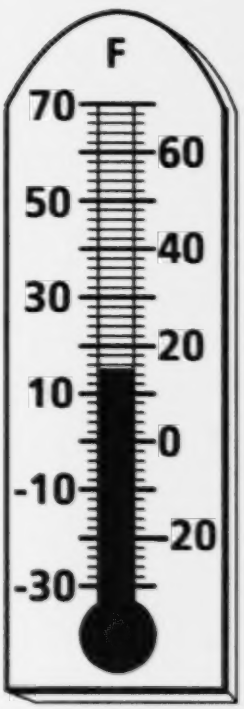
Chris is to have a 5-pound roast ready by 7:00 p.m. If the roast needs to cook 30 minutes per pound, what time should Chris start cooking it?

(1) 2:00 p.m
*(2) 4:30 p.m.
(3) 5:10 p.m.
(4) 9:30 p.m.

(1) subtracted 5
(2) *
(3) 5 x 30 = 150 min. (1 hr. 50 min.)
(4) added 2 1/2 hrs.

---

units of temperature



If the temperature goes down 20 degrees below that shown on the thermometer, the temperature will be

(1) 35° above zero
(2) 20° above zero
*(3) 5° below zero
(4) 20° below zero

(1) added 20
(2) used number given
(3) *
(4) used number given

Examples for Objective 7:

formulas

$(distance = rate \times time)$

In the 1960 Olympics, Wilma Rudolph won the 100-meter race in 11 seconds. What was her approximate rate in meters per second?

*(1) 9
(2) 89
(3) 110
(4) 1100

Strategies for Options:

(1) *
(2) 100 – 11
(3) 11 × 10
(4) 11 × 100

---

formulas

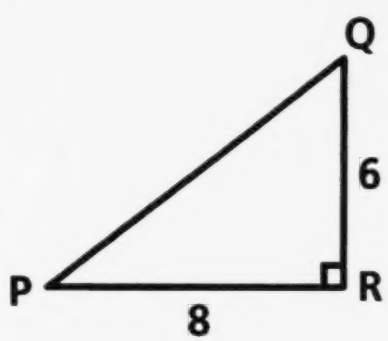
Paul bought groceries that cost $8.47 and paid with a $10 bill. Which could be his correct change?

(1) two pennies, two dimes, one quarter, one dollar bill
*(2) three pennies, two quarters, one dollar bill
(3) two pennies, two dimes, one quarter, two dollar bills
(4) three pennies, two quarters, two dollar bills

(1) represents $1.47
(2) *
(3) represents $.47 and subtracting 8 from 10
(4) forgets to borrow cents from dollar

---

formulas



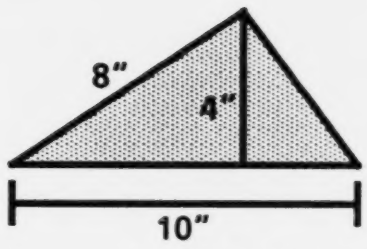
In the triangle above, which is the length of side PQ?

*(1) 10
(2) 12
(3) 14
(4) 24

(1) *
(2) 6 + 6
(3) 6 + 8
(4) $\frac{1}{2}(6 \times 8)$

Examples for Objective 7:

formulas



Which is the area of the shaded region in square inches?

*(1) 20
(2) 22
(3) 32
(4) 40

Strategies for Options:

(1) *
(2) 10 + 8 + 4
(3) (8 × 4), used incorrect formula (A = bh)
(4) A = $\frac{1}{2}$ (8 × 10), used wrong height

Skill Area: **Problem Solving**

Objective 8: **The student selects appropriate operations for a given problem situation, and the reverse, in an academic, everyday, or employment context.**

Assessment Characteristics:

The student is asked to choose the steps needed to solve a problem or to select a statement of a problem situation for a given set of operations.

- **selects appropriate operations**

  These problems use word problems in the stem but ask the student to select the way the problem should be solved rather than the correct answer.

- **selects situations for operations**

  No more than three arithmetic operations are combined to solve a problem.

  The steps may or may not be written as mathematical expressions.

  These problems may include whole numbers, fractions, decimals, and percents in combination. Computation is minimal.

  When questions require identification of a problem situation (see example, pg. 31), options do not require unnecessarily fine distinctions. Options may all be variations of the same problem situation. The amount of reading in options is limited.

Examples for Objective 8:

Strategies for Options:

appropriate operations

A park has 25 boats to rent. Enough boats are rented for 18 students to ride 2 in each boat. Which shows how many boats are left?

(1) $(18 \times 2) - 25$ — (1) multiplied instead of divided and confused subtrahend and minuend
(2) $(18 \div 2) + 25$ — (2) added to 25 instead of subtracted
(3) $(25 - 18) \div 2$ — (3) subtracted before dividing
*(4) $25 - (18 \div 2)$ — (4) *

---

appropriate operations

Kate works 3 hours on each of 4 afternoons a week. If she earns 48 dollars for the week, which shows how many dollars she earns per hour?

*(1) $48 \div (3 \times 4)$ — (1) *
(2) $48 \div (3 + 4)$ — (2) added 3 & 4 rather than multiplied
(3) $(3 \times 4) \div 48$ — (3) switched operator and operand
(4) $(3 + 4) \div 48$ — (4) added 3 & 4 and then multiplied

---

situations for operations

If student tickets cost \$.50 each and adult tickets cost \$1.50, then the sentence (3 x \$.50) + (2 x \$1.50) represents the total cost of

*(1) 3 student tickets and 2 adult tickets. — (1) *
(2) 3 adult tickets and 2 student tickets. — (2) reversed adult and student
(3) 150 student tickets and 300 adult tickets. — (3) 3 x 50 and 2 x 150 (ignored decimals; confused total cost and # sold)
(4) 5 tickets at \$2.00 each — (4) (3 + 2) tickets x (\$1.50 + .50)

---

situations for operations

$$\frac{50 + 90 + 100}{3} = 80$$

Which is an interpretation of the above number sentence?

*(1) 80 is the average of 50, 90, and 100.
(2) 3 is the average of 50, 80, 90, and 100.
(3) 80 is the average of 3, 50, 90, and 100.
(4) 100 is the average 50, 80, and 90.

Numbers from the problem were rearranged.

Skill Area: **Problem Solving**

Objective 9: **The student solves word problems in an academic, everyday, or employment context.**

Assessment Characteristics:

- **solves word problems**

  Problem solutions may involve several operations performed in a specified or implied sequence with two or more steps. The multiple steps are integral parts of a realistic solution strategy and may:

  -estimate measurements as part of a task's solution but not as a final step
  -use formulas
  -determine amounts of money
  -use geometric figures
  -use scale drawings
  -use unit pricing ("better buys" in retail stores).

  Some questions may require judgments about the appropriateness of alternative solution strategies.

  Questions may require recognizing basic ideas related to quantifiers, e.g., *all, some, none.*

  Questions may require recognizing logical conclusions, e.g., *all A's are B's; all B's are C's; therefore, all A's are C's.*

  Other problems may simply require identifying a correct solution procedure described in words rather than numbers.

  Solutions may require information that is reasonably assumed to be common knowledge, e.g., that there are 12 months in a year.

  Computation and reading level are kept simple.

Examples for Objective 9:

word problems

A car travels 3 kilometers in 2 minutes. At the same rate, which will be the time, in minutes, it will take to travel 12 kilometers?

(1) 4
(2) 6
*(3) 8
(4) 18

Strategies for Options:

(1) $12 \div 3 = 4$
(2) $3 \times 2 = 6$
(3) *
(4) 2 : 3 :: 12 : 18

---

word problems

1. If an animal is a horse, then it has 4 legs.
2. Rusty has 4 legs.

If the statements above are true, which is also true?

(1) Rusty is a horse.
*(2) Rusty could be a horse.
(3) Rusty is not a horse.
(4) Rusty could not be a horse.

(1) Arguing from converse
(2) *
(3) Opposite of (1)
(4) Opposite of (2)

---

word problems

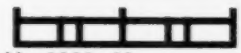
A group of 130 eighth and ninth grade students went on a field trip. Almost $\frac{1}{3}$ of them were eighth graders. Which is most likely the number of ninth graders on the trip?

(1) 40
(2) 65
*(3) 90
(4) 390

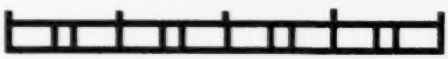
(1) about $\frac{1}{3}$ of 130
(2) $\frac{1}{2} \times 130$
(3) *
(4) 3×130

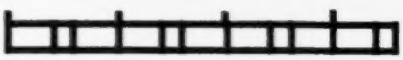
Examples for Objective 9:

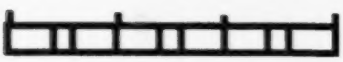
word problems

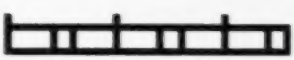


A fence made using two kinds of posts marked X and Y is set up as shown above. The shortest distance between an X post and a Y post is always 2 feet, and the shortest distance between two Y posts is always 1 foot. Which is a 20-foot fence of this type?

*(1) 

(2) 

(3) 

(4) 

Strategies for Options:

(1) *

(2) Only 18 feet

(3) Only 15 feet

(4) Only 13 feet

Examples for Objective 9:

word problems

Henry filled his car's gas tank full and then stopped after he had driven 266 miles to refill the tank. Henry forgot to write down the number of gallons that he bought but remembered that the gas cost 87.9¢ per gallon and that he had spent $8.35. About how many miles per gallon did he average on his trip?

(1) 25.3
*(2) 28.0
(3) 31.4
(4) 31.9

Strategies for Options:

(1) 266 ÷ (87.9 ÷ 8.35)
(2) *
(3) 835 ÷ 26.6
(4) 266 ÷ 8.35

Skill Area: **Problem Solving**

Objective 10: **The student organizes data in an academic, everyday, or employment context.**

Assessment Characteristics:

This objective focuses on collecting and organizing data to help solve a problem. Test questions may involve extraneous data.

- **organizes data into tables and charts**
- **organizes data into graphs and diagrams**

  These types of problems present a set of data and ask the student to select the best organization of that data. The data may be arranged in tables, charts, bar graphs, line graphs, circle graphs, pictographs, Venn diagrams, or flow charts. Graphs may be labeled incorrectly or have missing information.

  Some interpretation may be required.

- **collects data**

  Questions ask the student to identify additional information necessary to solve the problem or which questions to use when collecting data for a specified task.

  Questions may require the student to identify an appropriate sample for data collection.

Examples for Objective 10:	**Strategies for Options:**
collects data	
The principal of Georgia Junior High needs to know the approximate number of students who will be buying their lunches in the school cafeteria. To get an estimate, he will survey a small sample group of the student population. Which sample group would be most representative of the population for this survey?	
(1) the boys in grade 8	(1) biased towards males & 8th graders
(2) the girls in grades 7 and 9	(2) biased towards females & 7th and 9th graders
(3) all of grade 7	(3) biased towards 7th
*(4) one section from each grade	(4) *

Examples for Objective 10:

data into tables and charts

Strategies for Options:

Sales of Widgets

City	Person	Widgets Sold
Atlanta	Asher	42
Savannah	Brown	26
Macon	Jones	32
Atlanta	Felden	25
Valdosta	Garcia	34
Macon	Mooney	21
Valdosta	Smith	14
Savannah	Tower	31

Which table correctly shows the total number of widgets sold in each city?

*(1)

City	Number Sold
Atlanta	67
Macon	53
Savannah	57
Valdosta	48

(1) *

(2)

City	Number Sold
Atlanta	42
Macon	32
Savannah	26
Valdosta	34

(2) used only the first mention of city

(3)

City	Number Sold
Atlanta	53
Macon	67
Savannah	57
Valdosta	48

(3) Macon and Atlanta switched

(4)

City	Number Sold
Atlanta	53
Macon	67
Savannah	48
Valdosta	57

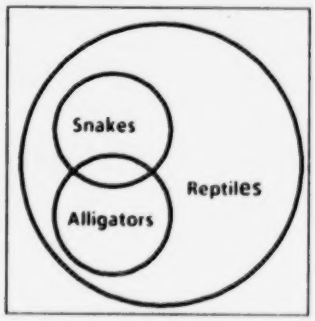
(4) Macon and Atlanta switched; Savannah and Valdosta switched

Examples for Objective 10:

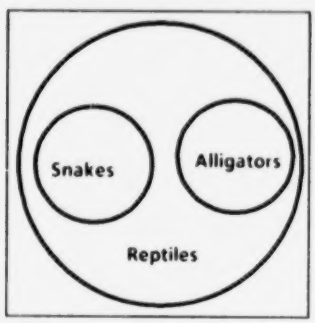
data into graphs and diagrams

All snakes are reptiles. All alligators are reptiles. No snakes are alligators. Which diagram shows these statements?

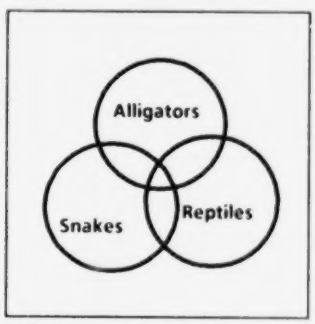
(1)



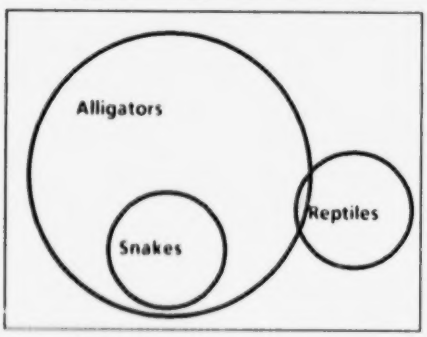
*(2)



(3)



(4)



Strategies for Options:

(1) confused "no" with "some"

(2) *

(3) confused "some" with "all"

(4) confused "no" (snakes) with "all" (snakes) and "all" (alligators) with "some"

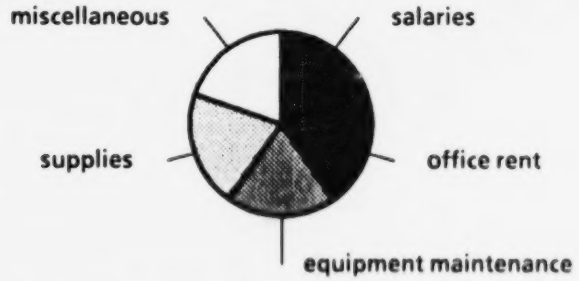
41

Examples for Objective 10:

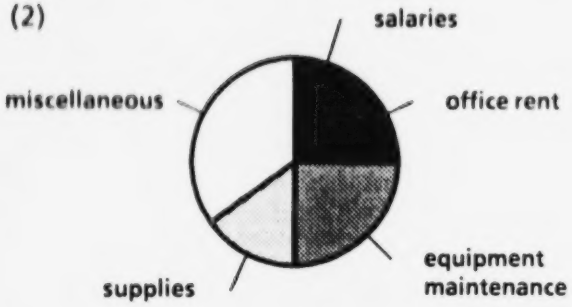
data into graphs and diagrams

The budget for the Whittleton Company is 35% salaries, 25% office rent, 15% equipment maintenance, 15% supplies, and 10% miscellaneous. Which graph correctly shows these proportions?

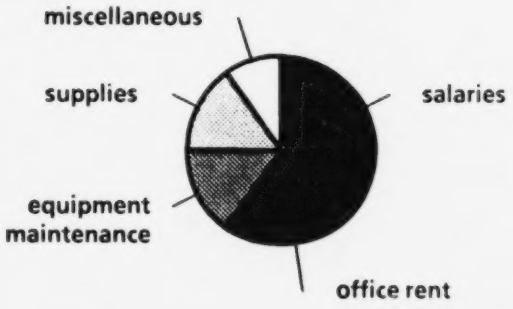
(1)



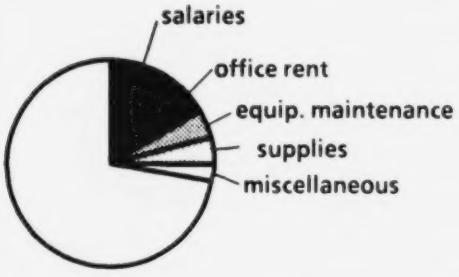
(2)



*(3)



(4)



Strategies for Options:

(1) evenly divided

(2) proper proportions but incorrect entries

(3) *

(4) confused % with degrees

Skill Area: **Problem Solving**

Objective 11: **The student interprets data which have been organized in an academic, everyday, or employment context.**

Assessment Characteristics:

The required reading level is kept low.

- **interprets data in tables and charts**
- **interprets data in graphs and diagrams**

  These questions focus on using information to solve a problem. Data may be presented in tables, charts, maps, circle graphs, bar graphs, line graphs, pictographs, Venn diagrams, or flow charts.

  Questions represent varying levels of complexity, from reading a graph to drawing inferences from the data, such as:

  -synthesizing information

  -making predictions

  -identifying a relationship or rule

  -interpolating within the range of the data

  -extrapolating beyond the range of the data

  - identifying or summarizing a trend.

- **finds mean, median, mode or range**

  If the student is asked to find the mean, the data are selected so that the mean will always be a whole number and so that the concept of mean, not the skill of addition, is being tested.

  If the student is asked to find the median, there will be an odd number of elements in the data set.

  Bi-modal distributions are excluded.

  The "range" is defined as the difference between the greatest and least scores. Answer choices for range items are not expressed in intervals (e.g., for the sample problem on page 43, the range would be 60).

  Test questions may require the student to apply these statistics.

Examples for Objective 11:

data in tables and charts

Reliable Equipment Rental

Tool	First 2 Hours	Each Additional Hour
Power Drill	$ 5.00	$2.00
Electric Saw	$ 8.00	$3.00
Carpet Shampooer	$15.00	$6.00
Lawn Mower	$10.00	$4.00

How much would it cost Susan to rent an electric saw for 5 hours?

(1) $ 8.00
(2) $11.00
*(3) $17.00
(4) $25.00

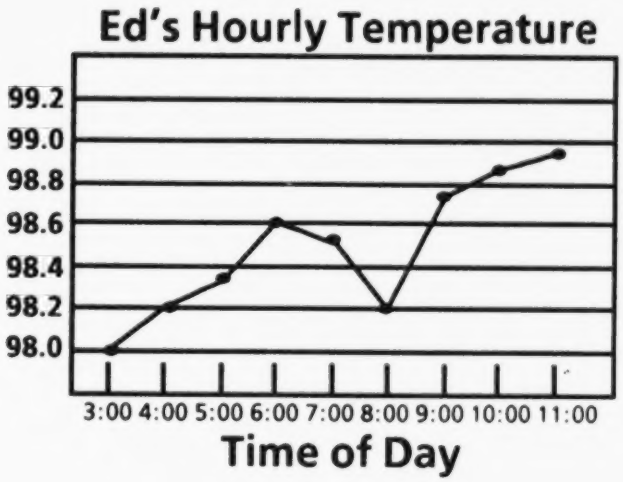
Strategies for Options:

(1) first 2 hours only
(2) first 3 hours only
(3) *
(4) (8 × 2) + (3 × 3)

Examples for Objective 11:

data in graphs

Strategies for Options:



Between which two hours did Ed show the greatest increase in his temperature?

(1) 5:00 and 6:00
(2) 7:00 and 8:00
*(3) 8:00 and 9:00
(4) 10:00 and 11:00

(1) first large rise
(2) greatest decrease
(3) *
(4) highest temperature

How many times did Ed's temperature drop below that of the hour before?

(1) 1
*(2) 2
(3) 3
(4) 4

(1) too few
(2) *
(3) too many
(4) too many

Examples for Objective 11:

mean, median, mode or range

Paul's Test Scores

95	80	85	35	35

‡The RANGE of Paul's test scores is

(1) 35
(2) 45
*(3) 60
(4) 80

Strategies for Options:

(1) lowest score
(2) 80-35
(3) *
(4) median

‡The MEAN of Paul's test scores is

(1) 35
*(2) 66
(3) 80
(4) 85

(1) mode
(2) *
(3) median
(4) middle score on graph

‡*Note: both of these items would not be used on the same test, since they are not independent.*

Skill Area: **Problem Solving**

Objective 12: **The student estimates results in an academic, everyday, or employment context.**

Assessment Characteristics:

This objective focuses on the use of estimation in the planning stages of problem solving. Outcomes may be qualitative as well as quantitative.

- **estimates results**

  When a student is asked to estimate a result, the method of estimation should be given. Numbers in problems are deliberately large to discourage students from calculating the results and then estimating. The closest option is not necessarily the best estimate.

  Questions may require the estimation of the number of units contained in a 1, 2, or 3-dimensional figure and may use non-standard, as well as standard, units of measurement.

  If the test question asks the student to estimate a measurement, the dimensions of the figure or object are not supplied.

  Questions with or without units of measurement are appropriate.

  Other questions may ask which of several different strategies gives the best estimate of a quantity.

  Questions may ask the student to evaluate the reasonableness of specified results.

Examples for Objective 12:

Strategies for Options:

results

The Math Club at Center High School has filled a five-gallon jar with beans. All the students are asked to guess how many beans are in the jar. A prize will be given to the person whose guess is closest to the actual number of beans in the jar.

Which method best estimates the number of beans in the jar?

(1) Count the number of beans around the outside of the jar and then multiply by the number of beans from the top to the bottom of the jar.	(1) confusing surface area with volume
*(2) Count the number of beans in a cup and then multiply by the number of cups in five gallons.	(2) *
(3) Measure the size of a bean and then multiply by the area of the jar.	(3) volume needed
(4) Weigh the jar, weigh a bean, and then multiply by the weight of the bean.	(4) division needed plus weight of jar

---

results

Which number rounded to the nearest hundreds would be 600?

(1) 496	(1) should be rounded up to 500
(2) 538	(2) should be rounded down to 500
*(3) 649	(3) *
(4) 715	(4) should be rounded down to 700

---

results

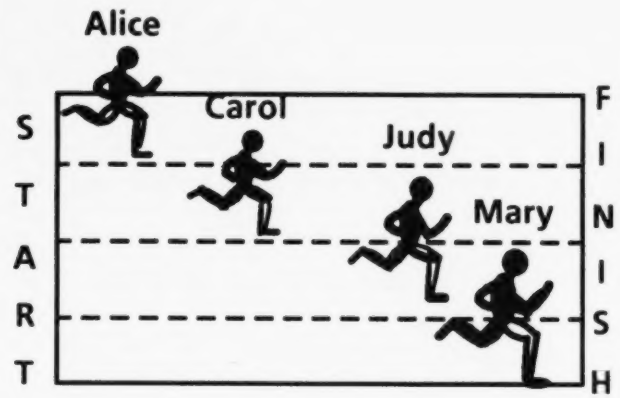
$$462 \times 819 =$$

Which shows the numbers in the problem rounded to the nearest hundreds?

(1) 400×800	(1) rounded 462 down
*(2) 500×800	(2) *
(3) 400×900	(3) closest answer but rounded both incorrectly
(4) 500×900	(4) rounded 819 up

Examples for Objective 12:

results



Which girl has run about $\frac{1}{3}$ of the track distance?

(1) Alice
*(2) Carol
(3) Judy
(4) Mary

Strategies for Options:

(1) too little
(2) *
(3) too much
(4) too much

READING

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING OBJECTIVES

Skill Area: Literal Comprehension

Objective 1: The student distinguishes between fact and opinion in an academic, everyday, or employment context.

Objective 2: The student recognizes explicitly stated main ideas, details, sequence of events, and cause and effect relationships in an academic, everyday, or employment context.

Objective 3: The student interprets instructions in an academic, everyday, or employment context.

Skill Area: Inferential Comprehension

Objective 4: The student recognizes implicitly stated main ideas, details, sequence of events, and cause and effect relationships in an academic, everyday, or employment context.

Objective 5: The student interprets word meanings and patterns of language in an academic, everyday, or employment context.

Objective 6: The student interprets figurative language in an academic or everyday context.

Objective 7: The student recognizes propaganda techniques in an academic, everyday, or employment context.

Skill Area: Problem Solving

Objective 8: The student uses reference sources in an academic, everyday, or employment context.

Objective 9: The student makes generalizations and draws conclusions in an academic, everyday, or employment context.

Objective 10: The student makes predictions and comparisons in an academic, everyday, or employment context.

Objective 11: The student recognizes relevance of data in an academic, everyday, or employment context.

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Literal Comprehension**

Objective 1: **The student distinguishes between fact and opinion in an academic, everyday, or employment context.**

Assessment Characteristics:

- **distinguishes fact and opinion**

  A fact is an objective statement which, given the necessary information, can be determined to be accurate or inaccurate. Standards such as measurement systems (e.g., the metric system), sensory data, and definitions are used to verify factual statements.

  An opinion is a value-laden statement expressing individual preferences, judgments, or beliefs which may or may not be referred to in a passage.

  Subject matter for these questions may, for example, come from textbooks, editorials, news reports, or reviews of books, music, and movies. When a passage is used, the facts and opinions are related to the passage.

  The questions do not test whether factual statements are true or false. For example, "Reagan was elected President in 1981" is a false fact and, therefore, would not be used as an option.

Examples for Objective 1:

Strategies for Options:

opinion

Which is an OPINION?

(1)	LOST: 15-lb. male dog	(1) can be verified
(2)	Black and tan terrier	(2) can be verified
*(3)	Cute and frisky	(3) *
(4)	Call 223-4567	(4) can be verified

Dear Customer:

Thank you for your order. You won't be disappointed. Your order was sent to our purchasing department for processing. They have notified us that we are temporarily out of our hair dryer, model #49620.

Delivery will be in approximately six weeks. Thank you for your patience.

opinion

Which is an OPINION?

(1)	Thank you for your order.	(1) factual
*(2)	You won't be disappointed.	(2) *
(3)	Your order was sent to our purchasing department for processing.	(3) factual
(4)	They have notified us that we are temporarily out of our hairdryer, model #49620.	(4) factual

---

fact

Which is a FACT?

*(1)	Bart:	I made twenty dollars mowing lawns Saturday.	(1) *
(2)	Joe:	Wow! That's a lot of money.	(2) opinion
(3)	Bart:	Mowing is a hard way to earn twenty dollars.	(3) opinion
(4)	Joe:	I guess so! It was sure hot Saturday, too.	(4) opinion

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Literal Comprehension**

Objective 2: **The student recognizes explicitly stated main ideas, details, sequence of events, and cause and effect relationships in an academic, everyday, or employment context.**

Assessment Characteristics:

Information for these questions is explicitly (or directly) stated in the passage or other stimulus material; a paraphrase is appropriate at this grade level. The correct response does not require knowledge beyond that provided by test materials; answers are passage dependent.

- **recognizes explicit main idea**

  The main idea is a major point of the passage. An explicit main idea is directly stated in a single sentence in a passage. Students are expected to recognize paraphrases of this main idea statement.

- **recognizes explicit details**

  The details in these questions are necessary or relevant to overall passage comprehension. Questions do not focus on trivial information. The information may be paraphrased.

- **recognizes explicit sequence of events**

  These questions may ask about the sequence of any events that are directly stated in the passage. The sequence is not arbitrary or trivial, e.g., sequence for morning routine. Signal words (e.g., *first*, *next*) may or may not be used.

- **recognizes explicit cause-effect**

  These questions require the student to identify one of the events in the cause-effect relationship or to describe the relationship between two events. These events and the relationship may be in one or two sentences in the passage. Words that directly signal the relationship (e.g., *because*, *so*, *and*) are included.

Examples for Objective 2:

Strategies for Options:

Of the many different kinds of storms, tornadoes are the smallest and most dangerous. Many people confuse tornadoes with hurricanes, but they are very different. A tornado travels about 15 or 20 miles with a path that is usually only about a quarter of a mile wide, while a hurricane may travel thousands of miles and have a path of destruction hundreds of miles wide. Despite its comparatively small size, a tornado is much more powerful and typically does much more damage than a hurricane, blowing cars through buildings and lifting loaded trucks from the highway.

Tornadoes occur every year killing people and destroying property and, therefore, must be monitored. Advance reports warn people about dangerous storms and give them time to make preparations. This job falls to the weather experts who constantly study the weather in the United States and in other parts of the world in order to predict how and when the weather will change. Because tornadoes are so dangerous and destructive, detection of them is a major part of these weather experts' job. These early warnings can reduce the amount of damage and the number of deaths and injuries caused by tornadoes.

explicit main idea

Which is the main idea?

(1) Tornadoes occur every year.	(1) detail
*(2) Tornadoes are small, dangerous storms.	(2) *
(3) Weather experts constantly study the weather.	(3) detail
(4) Advance reports warn people about dangerous storms.	(4) detail

---

explicit detail

The width of a tornado's path is typically

*(1) a quarter of a mile.	(1) *
(2) 15 or 20 miles.	(2) length of tornado's path
(3) hundreds of miles.	(3) width of hurricane's path
(4) thousands of miles.	(4) length of hurricane's path

---

explicit cause-effect

Because tornadoes are more powerful than hurricanes, they

(1) move slower	(1) may relate speed with size and power
(2) produce more rain.	(2) true of hurricanes, not tornadoes
*(3) cause more damage.	(3) *
(4) travel shorter distances.	(4) true but not related to power

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Literal Comprehension**

Objective 3: **The student interprets instructions in an academic, everyday, or employment context.**

Assessment Characteristics:

Questions for this objective require the student to recognize which of the four options shows that a set of instructions was completed correctly. The type as well as the sequence or organization of the information is relevant to answering the questions correctly.

- **interprets diagrams**
- **interprets forms**
- **interprets labels**
- **interprets lists / prose**

  Questions may use actual labels, forms, or diagrams. Directions may be presented in narrative form; lists or steps may be used.

  Question content may, for example, include transportation schedules, career information, or directions for assembling equipment. Instructions in an academic setting (e.g., how to arrange sections of a term paper) are also appropriate.

  "According to the passage" may be used in a question, if necessary, to eliminate interference from prior knowledge.

Examples for Objective 3:

Strategies for Options:

forms

"JUST FOR YOU" ORDER FORM

Name: _____

Address: _____

City: _____ State: _____

Zip Code: _____

Style #: _____

Size: _____ Initials: _____

Which information correctly completes the form?

(1) Bo Garrison
118 Center Street
GA
31600
#216
Large BG

(1) omitted city

(2) Bo Garrison
Mt. Pleasant,
#216
GA
31600
728-4290

(2) substituted phone number for style; omitted size and street address

*(3) Bo Garrison
118 Center Street
Mt. Pleasant, GA
31600
#216
Large BG

(3) *

(4) Bo Garrison
118 Center Street
Mt. Pleasant
31600
#216
Large

(4) omitted state and initials

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Inferential Comprehension**

Objective 4: **The student recognizes implicitly stated main ideas, details, sequence of events, and cause and effect relationships in an academic, everyday, or employment context.**

Assessment Characteristics:

Questions for this objective require the student to answer questions based on information which is implied in the passage.

Implicit information can be thought of as that information contained "between the lines" of a passage. The correct response should not require knowledge beyond that provided by test materials. While the information is implicit, or not directly stated, the answer is still dependent on clues in the passage.

- **recognizes implicit main idea**

  The main idea is the major point of the passage. It can be inferred from more than one sentence in the passage.

  Main idea questions test the student's ability to distinguish a major point of the passage from minor points, details, or inaccurate main idea statements.

- **recognizes implicit detail**

  Detail questions require the student to recognize the appropriate piece of information that answers a question. The passage offers clues, but the answer will not be directly stated.

  Information used in questions must be relevant to overall passage comprehension. Trivial information is not emphasized.

- **recognizes implicit sequence of events**

  Sequence of events questions require the student to order a series of events in the passage or identify an event that precedes or follows another event. These events are either not all directly mentioned or not discussed in the passage in the actual order they occurred.

  Events selected for question content must test information necessary or relevant to overall passage comprehension; they are not arbitrary lists like a sequence for a morning routine.

  These questions may ask about any event in a sequence except the last one. Explicit sequencing terms (*e.g. first, next, last*) are not used.

- **recognizes implicit cause-effect**

  These questions require students to identify a situation or event in the cause-effect relationship or to describe the relationship between two events, situations, or people. This relationship is based on information that may be found in several sentences in the passage.

  For these questions, words that make a relationship explicit (*e.g., as a result, and, so*) are not used.

Examples for Objective 4:

Strategies for Options:

American Indians in New England were, perhaps, the first in this country to have the chewing gum habit. An extract of the pulp of spruce trees provided them with something to chew to lessen their thirst during long journeys. Colonists, in turn, tried spruce gum but did not like its flavor.

An attempt was made in 1850 to substitute paraffin, a wax-like substance, for spruce gum. It was not successful, though, because paraffin did not have the right texture.

Twenty years later, a New York photographer discovered that chicle, the sap of the Chiclezapote tree, had the right texture. Unknown to him, Mexican Indians had been chewing the substance for centuries.

Most gum today is not made of chicle, but of latex rubber--again the sap of a tree, this time the sapodilla tree found in Central and South America. After the addition of natural or artificial sweeteners and flavoring, it is shaped and packaged. The popularity of chewing gum now extends far beyond the American Indians of New England.

implicit main idea

Which is the main idea?

(1) Amercian Indians used spruce pulp as chewing gum.	(1) detail
*(2) Chewing gum has been made of many substances over the years.	(2) *
(3) South American countries have been primarily responsible for the development of chewing gum.	(3) over statement
(4) Chewing gum is popular all over the world.	(4) true, but not main idea of paragraph

---

implicit detail†

Chewing gum has primarily been made from

(1) New England trees.	(1) only Indians used spruce trees
*(2) natural substances.	(2) *
(3) wax.	(3) experiment that failed
(4) artificial sweeteners and flavoring.	(4) additions to chewing gum

†*When questions ask overlapping information, they could not appear in the same test form.*

Examples for Objective 4:

implicit sequence of events†

1. Paraffin was a substitute for spruce gum.
2. Mexican Indians chewed the sap of the Chiclezapote tree.
3. Chewing gum was made of latex rubber.
4. A New York photographer discovered that chicle had the right texture for chewing.

Which is the correct order of events?

(1) 2,4,3,1
(2) 4,2,1,3
*(3) 2,1,4,3
(4) 4,1,2,3

†*When questions ask overlapping information, they could not appear in the same test form.*

Strategies for Options:

(1) discovery of chicle after Indian use
(2) 4 and 2 out of order
(3) *
(4) discovery of chicle not first event

---

implicit cause-effect

Paraffin was tried as a substitute for spruce gum because

(1) spruce gum was hard to obtain.
*(2) the taste of spruce gum was unacceptable.
(3) spruce gum did not lessen thirst.
(4) the texture of spruce gum was unacceptable.

(1) not mentioned in the passage
(2) *
(3) misread sentence
(4) the texture of paraffin was unacceptable

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Inferential Comprehension**

Objective 5: **The student interprets word meanings and patterns of language in an academic, everyday, or employment context.**

Assessment Characteristics:

Appropriate questions involve either semantic relationships (word meanings) or syntactic relationships (sentence structure or word pattern) in sentences.

- **interprets words in context**

  Questions require the student to interpret words from context. Passages contain sufficient context clues to help students determine the meaning of the underlined word(s).

  Words with multiple meanings or words considered unfamiliar to this level student may be used to require the student to rely on the context of a paragraph or passage. Obscure word meanings are not used.

- **interprets affixes**

  Questions require the student to interpret or select prefixes and suffixes when an appropriate example is given or to identify the effect that an affix has on a word.

  Students are not required to know the definition of an affix.

- **interprets pronoun referents**

  Questions require the student to match pronouns to their referents in the context of a paragraph or passage.

- **interprets equivalent sentences**

  Questions require the student to interpret punctuation in order to select a sentence or set of sentences which is equivalent to a given statement.

  Other questions require students to match two or more sentences with a paraphrased sentence or sentences.

- **interprets syntax**

  Questions require students to select a syntactically appropriate form of a word to complete a sentence.

Examples for Objective 5:	Strategies for Options:
words in context	
Marti was piqued by her brother's behavior. He refused to help her do the yard work.	
Piqued means	
*(1) angered.	(1) *
(2) calmed.	(2) syntactically appropriate, but not correct meaning.
(3) pleased.	(3) syntactically appropriate, but not correct meaning.
(4) interested.	(4) syntactically appropriate, but not correct meaning.
affixes	
In which word does dis mean not?	
*(1) dishonest	(1) *
(2) dishpan	(2) begins with dis, but does not mean not
(3) dismal	(3) begins with dis, but does not mean not
(4) distress	(4) begins with dis, but does not mean not
pronoun referents	
Martin invited three friends to a movie. He asked Manuel, Bobby and Nathan. They all agreed to go. Nathan said his mom would take them if Martin's mom could pick them up.	
His refers to	
(1) Bobby.	(1) mentioned in paragraph
(2) Manuel.	(2) mentioned in paragraph
(3) Martin.	(3) mentioned in paragraph
*(4) Nathan.	(4) *

Examples for Objective 5:	Strategies for Options:
equivalent sentences	
Molly studied hard. Molly wanted to pass her test.	
Which means the same as the two sentences?	
(1) Molly wanted to study.	(1) misinterpretation of "studies hard" and "wanted to pass"
*(2) Molly studied hard and wanted to pass the test.	(2) *
(3) Molly passed the test although she didn't study.	(3) incorrect causal relationship
(4) Molly wanted to pass the test even though she studied hard.	(4) incorrect relationship between the two sentences
equivalent sentences	
Many students get government loans. The loans help pay their college tuition.	
Which means the same as the two sentences?	
*(1) To help pay their tuition, many college students use government loans.	(1) *
(2) Many students get government loans after they go to college.	(2) words are rearranged--meaning is different
(3) Many colleges help students pay for government loans.	(3) words are rearranged--meaning is different
(4) Government loans come from tuition that students pay.	(4) words are rearranged--meaning is different
syntax	
In the park there are five _____	
(1) bench.	(1) alternate form of "benches"
(2) benched.	(2) alternate form of "benches"
*(3) benches.	(3) *
(4) benching.	(4) alternate form of "benches"

Examples for Objective 5:

syntax

Richard _____ the bicycle before buying it.

(1) examine
*(2) examined
(3) examiner
(4) examining

Strategies for Options:

(1) alternate form of "examined"
(2) *
(3) alternate form of "examined"
(4) alternate form of "examined"

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Inferential Comprehension**

Objective 6: **The student interprets figurative language in an academic or everyday context.**

Assessment Characteristics:

- **interprets figurative language**

  Questions require the student to select the non-literal meaning of a phrase (i.e., phrases where meaning cannot be derived from the literal definition of the individual words such as *"raining cats and dogs"*). The phrase is always given in a context (poetry, sentences, or a passage).

  Examples of figures of speech that may be used are:

  --metaphors, when comparsions are implied (*"the curtain of night"*);
  --similes, when one thing is likened to another (*"Her tears fell like rain"*); and
  --hyperboles or exaggerations (*"His suitcase weighed as much as the airplane"*).

  Idioms (e.g., *"take a walk"*), slang, cliches (e.g., *"strong as an ox"*), and trite expressions are not used at this level.

Examples for Objective 6:

Strategies for Options:

figurative language

The Georgia coast reaches out
to touch the mother sea,
The Georgia border
to meet her sister states.

In the poem, Georgia is treated as if it were a

(1) nearby state.
(2) body of water.
(3) school of fish.
*(4) member of a family.

(1) "nearby" plausible based on "reaching out to touch"
(2) reference to coast
(3) reference to sea
(4) *

---

figurative language

The lake was calm. The sun reflected off its surface as though it were a newly polished mirror.

The underlined phrase means the lake was

(1) clean.
(2) oval.
(3) wet.
*(4) smooth.

(1) reference to "polished"
(2) shape of a mirror
(3) water is wet
(4) *

EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Inferential Comprehension**

Objective 7: **The student recognizes propaganda techniques in an academic, everyday, or employment context.**

Assessment Characteristics:

- **recognizes propaganda techniques**

  Questions require the student to recognize an underlying intent to persuade or the reasoning used in the argument.

  Various propaganda techniques may be used such as: testimonials of "famous" people; ambiguous statements such as "the students agreed"; bandwagon where everyone is using/doing something; card stacking where only positive information is presented; authoritative opinion like "Doctors say. . . ."

  Questions do not ask students to identify which type of propaganda technique is used.

  Appropriate contexts include advertisements as well as typical interpersonal situations in which one person tries to persuade another.

Examples for Objective 7:

Strategies for Options:

Use GLOW -- the toothpaste that makes teeth sparkle! GLOW brightens smiles and freshens breath. GLOW contains fluoride to prevent cavities. Buy GLOW today!

propaganda techniques

The main purpose of the advertisement is to

*(1) sell GLOW toothpaste.
(2) make people smile more often.
(3) encourage good dental health.
(4) compare GLOW to another toothpaste.

(1) *
(2) reference to smiles
(3) toothpaste equals dental health
(4) comparison logical in a commercial

Cecil had asked Marsha to go to the county fair with him. Marsha wasn't sure her parents would let her go to the fair. She thought about how she would ask them. When she finally talked to them, she said the fair was really very close to home. She said that lots of her friends from school would be there and that Cecil would be sure she got home all right.

propaganda techniques

Marsha wanted to convince her parents that a trip to the fair was

(1) crowded.
(2) exciting.
*(3) safe.
(4) short.

(1) true, but not reason given
(2) true, but not reason given
(3) *
(4) reference to nearby

Skill Area: **Problem Solving**

Objective 8: **The student uses reference sources in an academic, everyday, or employment context.**

Assessment Characteristics:

Questions require the use of cross-reference techniques such as those used in telephone books (e.g., "doctor" listed as "See physician"); multiple-step search strategies (e.g., Jan called 3 government agencies and still didn't have the question answered. Where could she check next?); and recognizing various classification schemes such as those used in libraries.

Questions may focus on why one source is more appropriate than another for a specific need.

Students are expected to have knowledge of and experience with these materials.

- **uses library reference materials**

  Questions require students to locate information for a specific task, including which source to use as well as how to use it.

  Questions include knowledge about using card catalogues. Appropriate reference materials might include atlases, almanacs, and encyclopedias.

- **uses dictionary**

  Questions include recognizing the purpose of a dictionary or thesaurus as well as how to use them for selecting appropriate meanings of words, finding synonyms or antonyms, etc.

- **uses index / appendix**

  Questions require students to understand the purpose of an index or appendix as well as how to use them.

- **uses table of contents**

  Questions require students to use tables of contents to locate information.

- **uses telephone book**

  Questions require students to be familiar with using both the white and yellow page sections of a telephone book.

- **uses other reference materials**

  Questions emphasize the use of non-academic reference sources such as classified ads, recipes, instruction manuals, and public information documents.

  A person (e.g., a police officer) may also be considered an appropriate source of information.

Examples for Objective 8:

library reference materials

Ju
799.1
Bas Bass, John
A Guide to Fishing

New York: Forest-Alcott [c1979]
174p Illus.

Which information would be most useful in order to find this book on a library shelf?

Strategies for Options:

*(1) Ju
799.1
Bas

(1) *

(2) Ju.
c1979

(2) date not necessary

(3) 174p

(3) number of pages unnecessary

(4) 799.1
Fishing

(4) topic not necessary

Examples for Objective 8:

Strategies for Options:

muf•fle(*'muf-l*),n. 1. Anything that deadens a sound. 2. An oven used for hardening or drying pottery; a kiln. -*v.* muffled, muffling. 3. To wrap for warmth. 4. To wrap for the purpose of deadening sound.

mur•mur(*'mur-mur*),n. 1. A whispered sound. 2. A soft mutter. -*v.* murmured, murmuring. 3. To mutter. 4. To complain in low tones. 5. To make low sounds.

mus•ter(*'mus-ter*),n. 1. A gathering of troops. 2. The official roll for a military unit. -*v.* mustered, mustering. 3. To bring together troops. 4. To enlist.

muz•zle(*'muz-l*),n. 1. The jaws and nose of an animal. 2. A fastening or covering for the mouth of an animal to prevent biting. -*v.* muzzled, muzzling. 3. To bind shut the mouth of an animal to prevent from biting. 4. To keep someone from speaking freely.

mys•ti•fy(*'mis-ta-fi*), v.t., 1. to cause bewilderment in. 2. to involve in mystery or obscurity.

dictionary

Which word means to speak in a low voice?

(1) muffle
*(2) murmur
(3) muster
(4) mystify

(1) other dictionary choice
(2) *
(3) other dictionary choice
(4) other dictionary choice

dictionary

The dog's muzzle was used when his master took him into a large crowd of people.

Which meaning of the word muzzle fits the sentence?

(1) 1
*(2) 2
(3) 3
(4) 4

(1) other meaning
(2) *
(3) other verb meaning
(4) other verb meaning

Examples for Objective 8:

Strategies for Options:

index

Oxygen, 11 importance to plants, 15 importance in breathing, 15 Pesticides, 23, 65 Plants crop damage, 51, 52, 53, 54, 55 forests, 10, 46-49, 51 importance of oxygen, 15 Pollution control of, 83 sources of, 82 tests to measure, 85 Smoke, 36, 37, 39 Smoking, 46-47, 48, 60 Sunlight, 25, 31

Josh does not know how pollution in the atmosphere is measured. To which page should he refer?

(1) 11
(2) 25
(3) 83
*(4) 85

(1) oxygen in atmosphere, but too general
(2) sunlight, related to atmosphere
(3) pollution control--related topic
(4) *

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other reference materials

English Shopping Center

Basket Shoppe	*LL 4*
Ferns & Flowers	*LL 3*
Games-to-Go	*UL 1*
Glenn's Subs & Soups	*UL 3*
Hannaford's Store	*LL 1*
Sportswear Unlimited	*UL 2*
Weight Clinic	*LL 2*

At which location would someone most likely be able to buy lunch?

(1) LL4
(2) UL1
*(3) UL3
(4) LL2

(1) reference to basket of food, e.g., burger basket
(2) equates Games-to-Go with takeout lunch
(3) *
(4) weight relates to eating

Skill Area: **Problem Solving**

Objective 9: **The student makes generalizations and draws conclusions in an academic, everyday, or employment context.**

Assessment Characteristics:

- **makes generalizations**

  These questions require the student to use information from the passage to either formulate a generalization or to apply a generalization to another situation. To generalize means to infer a principle or general statement from particular facts given in the paragraph.

  A generalization can be applied to other situations, points in time, people, or events beyond those described in the passage.

- **draws conclusions**

  These questions require the student to recognize an appropriate ending, outcome, or final decision based on multiple pieces of information presented in the passage.

  A conclusion brings closure to a passage and is specific to the information or situation in the passage.

Examples for Objective 9:

When John applied for a part time job, the employer, Mr. Bates, examined John's school records. He noticed that John had been late as much as three days a week. John's last employment reference indicated that he had some trouble arriving at work on time. Mr. Bates did not hire John.

generalizations

Which did Mr. Bates decide about John?

(1) John could work only three days a week.
(2) John had been late for school but will get to work on time.
(3) John was not worried about getting a job.
*(4) Being on time was not important to John.

Strategies for Options:

(1) reference to late 3 days
(2) contradicts evidence from last job
(3) no evidence to support this statement
(4) *

The land of Mingo is surrounded by an ocean. Because of the ice and snow, the growing season is too short for growing anything except for what families need for themselves. The people must make their living in other ways. Mingo's ocean provides good fishing most of the year. The inhabitants of this land have become good sailors because they spend so much time on the water.

conclusions

Which industry would most likely be attracted to Mingo?

(1) farming
(2) vacation resorts
*(3) seafood packing
(4) water processing plant

(1) reference to limited growing season
(2) no basis, faulty conclusion that island countries make good resorts
(3) *
(4) no basis, but water is plentiful

Skill Area: **Problem Solving**

Objective 10: **The student makes predictions and comparisons in an academic, everyday, or employment context.**

Assessment Characteristics:

- **makes predictions**

  Prediction questions require the student to identify the next most likely event based on other events or clues in a passage. The event should be a plausible occurrence.

- **makes comparisons**

  These questions require the student to answer questions based on a comparison or to identify the dimension(s) for which a comparison is made.

  Comparisons or contrasts may be made between characteristics of events, people, or situations.

  If a question requires identifying the basis for comparison (e.g., *time*, *expense*), this dimension will not be stated directly in the passage.

Examples for Objective 10

Paula's family was preparing for a day trip to the beach. They wanted to spend the day outdoors enjoying the sunshine. Because the beach was two hours away, everyone was up early. While the rafts, towels, and food were being packed in the car, storm clouds gathered on the horizon. Soon everyone heard a roll of thunder. Large raindrops began to fall.

predictions

Which will Paula's family most likely do next?

(1) pack rain umbrellas
(2) picnic in the back yard instead
(3) go to the beach in the rain anyway
*(4) check a weather report for the beach

Strategies for Options:

(1) logical, if it's raining
(2) if it's raining, why picnic at all
(3) not logical
(4) *

Of the many different kinds of storms, tornadoes are the smallest and most dangerous. Many people confuse tornadoes with hurricanes, but they are very different. A tornado travels about 15 or 20 miles with a path that is usually only about a quarter of a mile wide, while a hurricane may travel thousands of miles and have a path of destruction hundreds of miles wide. Despite its comparatively small size, a tornado is much more powerful and typically does much more damage than a hurricane, blowing cars through buildings and lifting loaded trucks from the highway.

Tornadoes occur every year killing people and destroying property and, therefore, must be monitored. Advance reports warn people about dangerous storms and give them time to make preparations. This job falls to the weather experts who constantly study the weather in the United States and in other parts of the world in order to predict how and when the weather will change. Because tornadoes are so dangerous and destructive, detection of them is a major part of these weather experts' job. These early warnings can reduce the amount of damage and the number of deaths and injuries caused by tornadoes.

comparisons†

How are tornadoes and hurricanes different?

(1) Hurricanes are more dangerous than tornadoes.
*(2) Tornadoes travel a shorter distance than hurricanes.
(3) Hurricanes occur more often than tornadoes.
(4) Weather reporters track hurricanes better than tornadoes.

(1) inaccurate information
(2) *
(3) unknown
(4) unknown

†*This passage was used in Objective 2. Passages often have questions from more than one objective.*

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EIGHTH GRADE CRITERION-REFERENCED TESTS
READING TEST CONTENT

Skill Area: **Problem Solving**

Objective 11: **The student recognizes relevance of data in an academic, everyday, or employment context.**

Assessment Characteristics:

Relevance of data questions require the student to select relevant or irrelevant information for a specific problem.

- **recognizes relevance of data**

  The student may be asked to identify what additional information is necessary to solve the problem or what criteria were used for solving a problem.

  If the question requires some interpretation of the importance of data, the criterion for making a decision is specified.

Examples for Objective 11:

Strategies for Options:

GRANVILLE SCHOOL CARNIVAL

CRAFTS & GAMES
BOOK SWAP
DUNKING BOOTH
DART THROW
CAKE WALK
HOMEMADE GOODIES
AND MUCH, MUCH MORE

SCHOOL GYMNASIUM
FRIDAY 6:00 - 12:00
SATURDAY 9:00 - 1:00

relevance of data

What important information is missing for a person who wants to attend the carnival?

(1) which friends are going
(2) who will be dunked
(3) who made the goodies
*(4) what are the dates

(1) missing, but not related to decision
(2) missing, but not related to decision
(3) missing, but not related to decision
(4) *

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Werner Rogers
State Superintendent of Schools
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